iRZ automation

iRZ MC52iWDT GPRS class 10 GSM modem

USER MANUAL

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1. Safety Requirements

Restrictions for the usage of the device in the vicinity of other electronic devices:

- turn off the modem in hospitals or in the vicinity of medical equipment (e.g. cardiostimulators, hearing aids). It can cause interference for medical equipment;
- turn off the modem in aircrafts. Take measures against accidental activation;
- turn off the modem in the vicinity of gas-filling stations, chemical enterprises, blasting work places. It can cause interference to technical devices;
- at a short range the modem may cause harmful interference to TV and radio receivers.

Prevent the modem from dust and moisture.

Improper use deprives you of all warranty claims.

2. General Information

2.1. Parameters

The modem iRZ MC52iWDT — is a structurally accomplished GSM modem designed for reception and transmission of data, text messages and telecopies. It is excellently adjusted both for mobile Internet Access and for industrial applications — telemetry, wireless data collection from sensors, remote surveillance, monitoring and signaling. The control is performed by means of standard AT commands. The modem is equipped with light-emitting diodes (LEDs) enabling to monitor the status of connection.
This modem includes function of unconditional actuation with interval of 24 hours.

2.2. Configuration

Complete set of the GSM modem MC52iWDT:

- modem iRZ MC52iWDT,
- label,
- factory box.

2.3. Parameters

Basic parameters:

- frequency ranges: GSM 900/1800 mHz or 850/900/1800/1900 mHz (depends on the GSM module);
- output capasity:
  - 2W (class 4 for EGSM 850/900),
  - 1W (class 1 for GSM1800),
- GPRS class 8/10 (depends on the GSM module);
- TCP/IP suit available through AT commands;
- MC class B;
- CSD up to 14.4 kbps;
- USSD;
- SMS;
- voice transmission;
- fax group 3: class 1.

Power supply:

- power supply voltage from 9 to 28 V;
- absorbed current not more than:
  - with power supply voltage +12 V – 200mA;
  - with power supply voltage +24 V – 100mA.

Physical parameters:

- size not more than 69x74x33 mm,
- weight not more than 100 g.,
- operating-temperature range from -50°C to +65°C,
- storage temperature range from -50°C to +85°C.

Interfaces:

- connector RJ11 for power supply connection,
- connector RJ11 for audio interface connection,
- connector DB9 for connection of the data cable RS-232,
- connector FME for GSM antenna connection.

2.4. Exterior Appearance

The modem iRZ MC52iWDT is a compact device completed in a plastic housing. The external appearance is represented on Fig.2.4.1 and Fig.2.4.2.

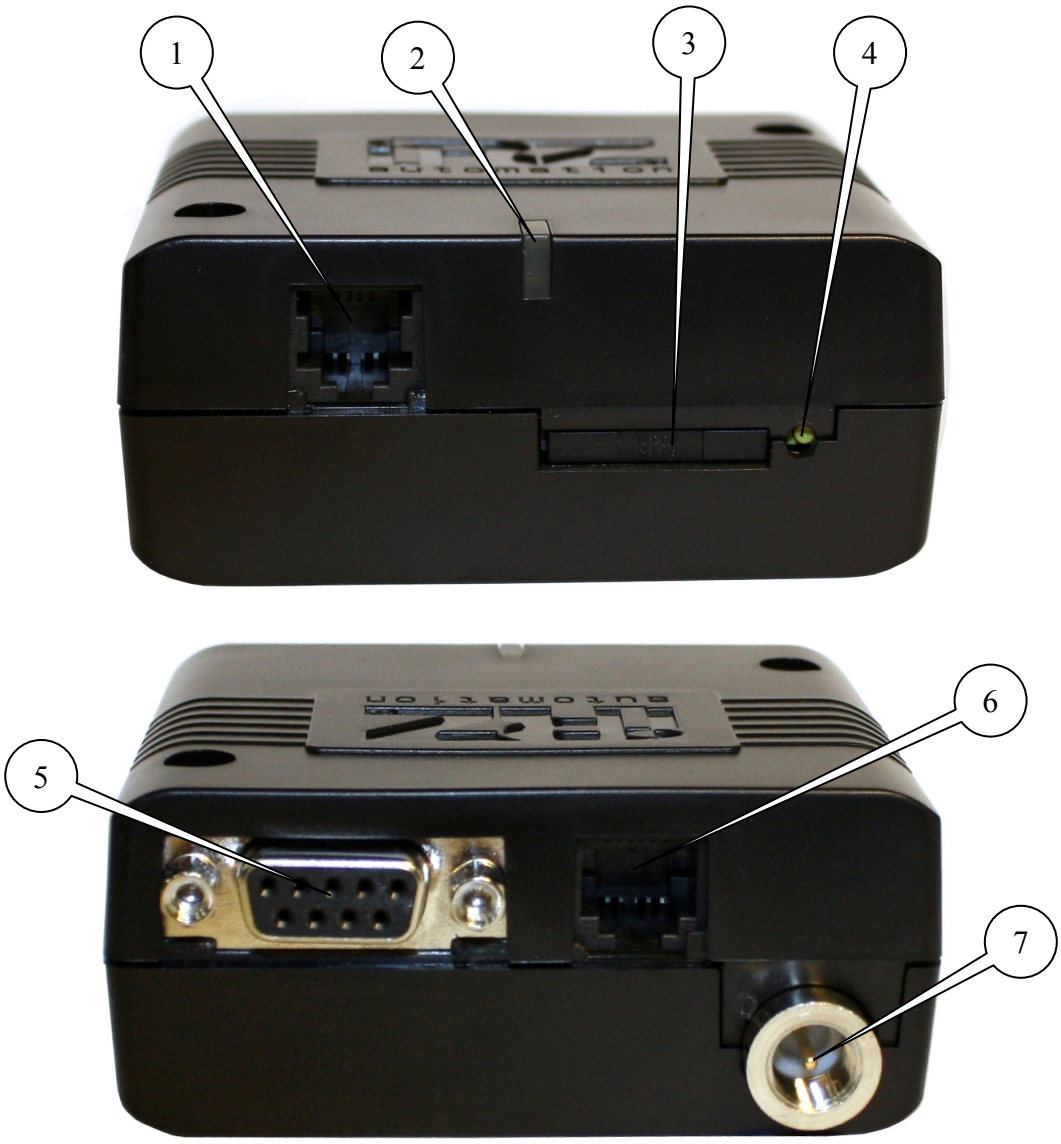

Fig.2.4.2 Back view.

On the figures the digits signify the following:

1. connector RJ11 for audio interface connection,
2. network LED indicator,
3. SIM card tray,
4. SIM card tray extracting button,
5. connector DB9 for connection of the data cable RS232,
6. connector RJ11 for power supply connection,
7. connector FME for GSM antenna connection.

2.5. Interfaces

2.5.1. Connector DB9 (RS232)

The connector is used for connection to the control device, exchange protocol RS232.

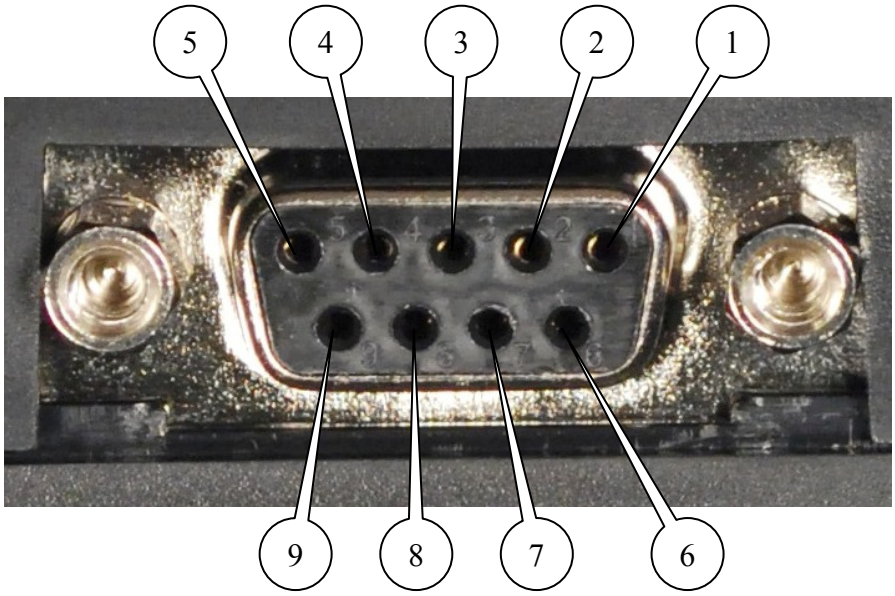

Fig.2.5.1 Connector DB9

Table 2.5.1 Purpose of the connector pins.

Pin	Signal	Direction	Purpose
1	DCD	Modem-PC	Availability of carrier wave
2	RXD	Modem-PC	Data reception
3	TXD	PC-Modem	Data transmission
4	DTR	PC-Modem	Availability of data receiver
5	GND	general	System housing
6	DSR	Modem-PC	Readiness of data
7	RTS	PC-Modem	Request for transmission
8	CTS	Modem-PC	Availability of transmission
9	RI	Modem-PC	Call signal

2.5.2. Power supply connector RJ11

The connector is used for connection of electric power supply.

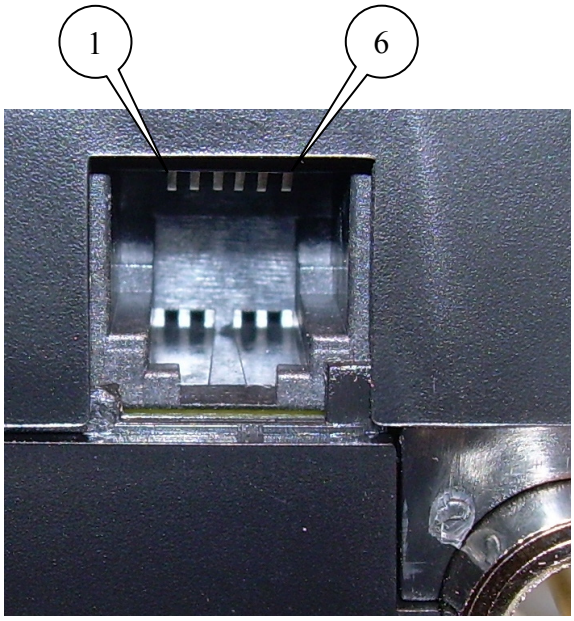

Table 2.5.2 Purpose of power supply connector pins.

Contact	Signal	Purpose
1	+ 12V	Positive pole of DC supply voltage. Protected with a fuse and the protection circuit against voltage-surge (with voltage infeed rate more than 30V) and incorrect polarity.
2	not used	
3	EMERGOFF	Emergency shutdown
4	STARTING	Trigger a modem
5	not used	
6	GND	System housing

2.5.3. Audio Interface Connector RJ11

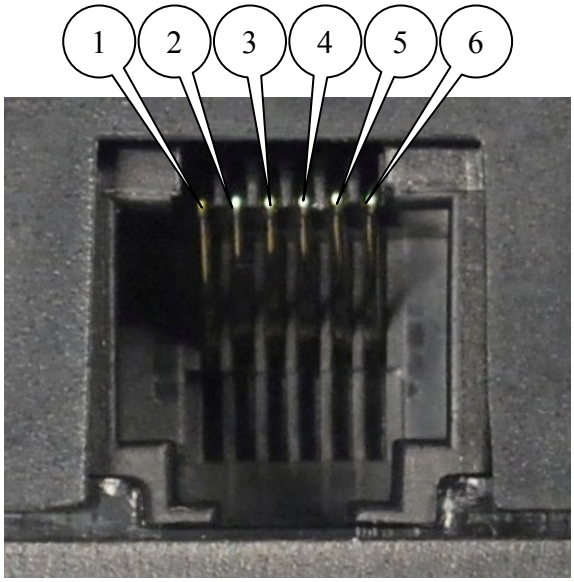

Fig.2.5.3 Connector RJ11

Таблица 2.5.3 Purpose of the power supply connector pins.

Contact	Signal	Purpose
1	MICP	microphone input and microphone power supply not inverse
2	SPKP	phone output not inverse
3	SPKN	phone output inverse
4	MICN	phone input inverse

2.6. Modem Status Indication

LED indication is provided in the modem for connection status indication.

Table 2.6.1 Connection status indication

Indication mode	Operation mode
Turned off	Modem is turned off or there is an emergency situation
600 ms on / 600 ms off	Modem is not registered in the network
75 ms on / 3 s off	Modem is registered in the network
75 ms on / 75 ms off / 75 ms on / 3 s off	GPRS connection is installed
500 ms on / 50 ms off	Data transmission is underway

3. Connection and Setting Up

3.1. Connection

Before feeding the power supply you need to install the SIM card in the modem (the SIM card must be enabled). To do this, you need:

- to extract the SIM tray by pressing the SIM tray extract button (Fig. 2.4.1);
- to install the SIM card into the SIM tray;
- to insert the SIM tray with the SIM card into the modem.

No strong physical efforts must be applied while installing the SIM card.

Connect the GSM antenna to the antenna connector, as well as the commutating cable (RS232). Feed power supply to the modem through the connector RJ11 (Fig. 2.4.2).

Note: GSM antenna, data cables and electrical power unit are not included in the complete set configuration.

After the power supply feeding, registration occurs automatically, which is signaled by the green indicator frequent flashing. After the registration is completed, the modem jumps to the operating mode, the green indicator flashes less frequently (Table 2.6.1).

3.2. Control, Restarting and Power Off

The modem control is performed by standard AT commands. For additional information and support visit the manufacturer's site – *www.radiofid.ru*.

Modem restarting can be carried out by the following ways:

- by the program method through AT commands,
- by eight jumpings of the DTR COM port line into passive state (DTR < 3V), duration of pulses and the pauses between the pulses must lie within the range 100-500 ms,
- by temporary power-off.

The modem can be powered off using the following ways:

- by the program method, using AT commands (escape to the power standby mode);
- directly by power-off.
- signal EMERGOFF (emergency shutdown) - go and find a high level (from 5V to 27V) is not less than 20 ms. Use EMERGOFF signal only when there is a serious problem when more than 5 seconds, there is no response from the modem. The alarm EMERGOFF leads to the loss of all data stored in volatile memory GSM module;

After power-off made by means of AT commands, the modem escapes to the power standby mode (minimum power consumption). Escaping from the power standby mode is performed upon the DTR of the COM port.

Every 24 hours is an absolute reset the modem. When restarting the GSM module in the modem off for food. This function can not be disabled. Restart interval depends on the ambient temperature, and can vary by 20-30 minutes.